

ABSTRACT OF THE DISCLOSURE

A method and arrangement for producing a boride layer on a surface by plasma boronizing includes supplying a gas mixture containing a boron-releasing gas to a reactor and generating a glow discharge in the reactor using a pulsed DC voltage. The parameters of the production of the plasma produced by the glow discharge in a treatment chamber of the reactor are selected so that an increased quantity of excited boron particles is generated in the plasma to produce non-porous boride layers, for example, for boride coating of components which need a surface that is highly resistant to wear, for example, gears, camshafts and the like. Parameters with which the production of the boride layer can be controlled are, for example, voltage, pulse-duty factor, frequency, temperature, treatment chamber pressure during the production of the plasma, and the content of boron-releasing gas and of the remaining components in the gas mixture which is fed to the reactor.